

(Click on map below to access company's profile.)

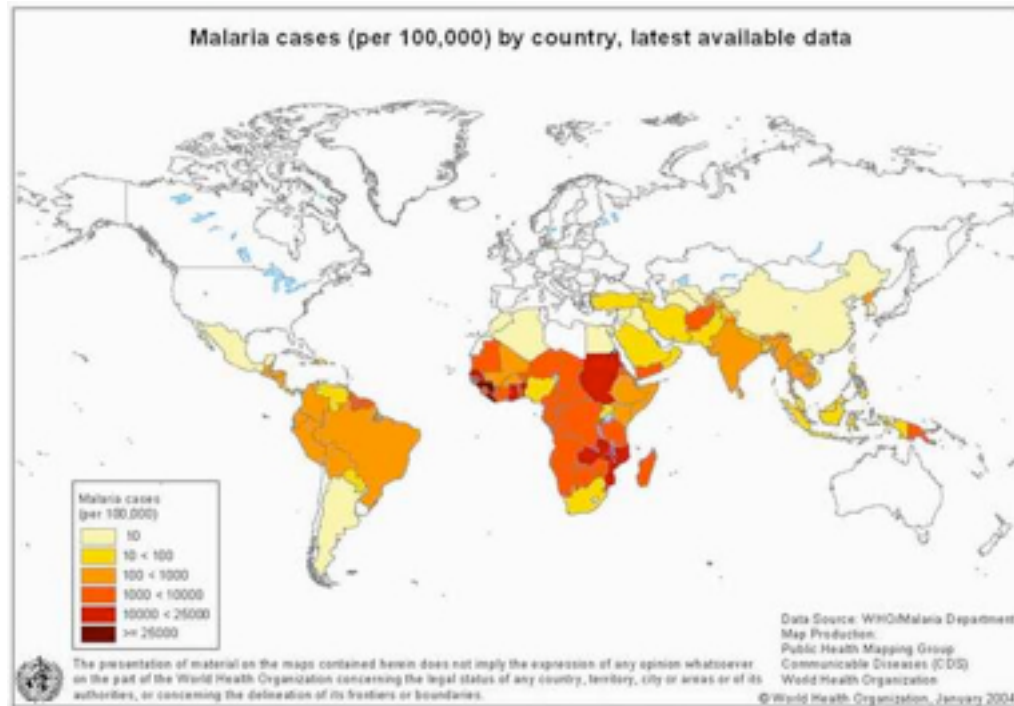


What do we want to be true?

10, 20, 30 years from now...

What about today?

Most projects are Herculean



2) Jay Keasling's teams spent \$25M to make artemisinin via biotechnology.

1) Malaria is a global problem, artemisinin offers a cure.

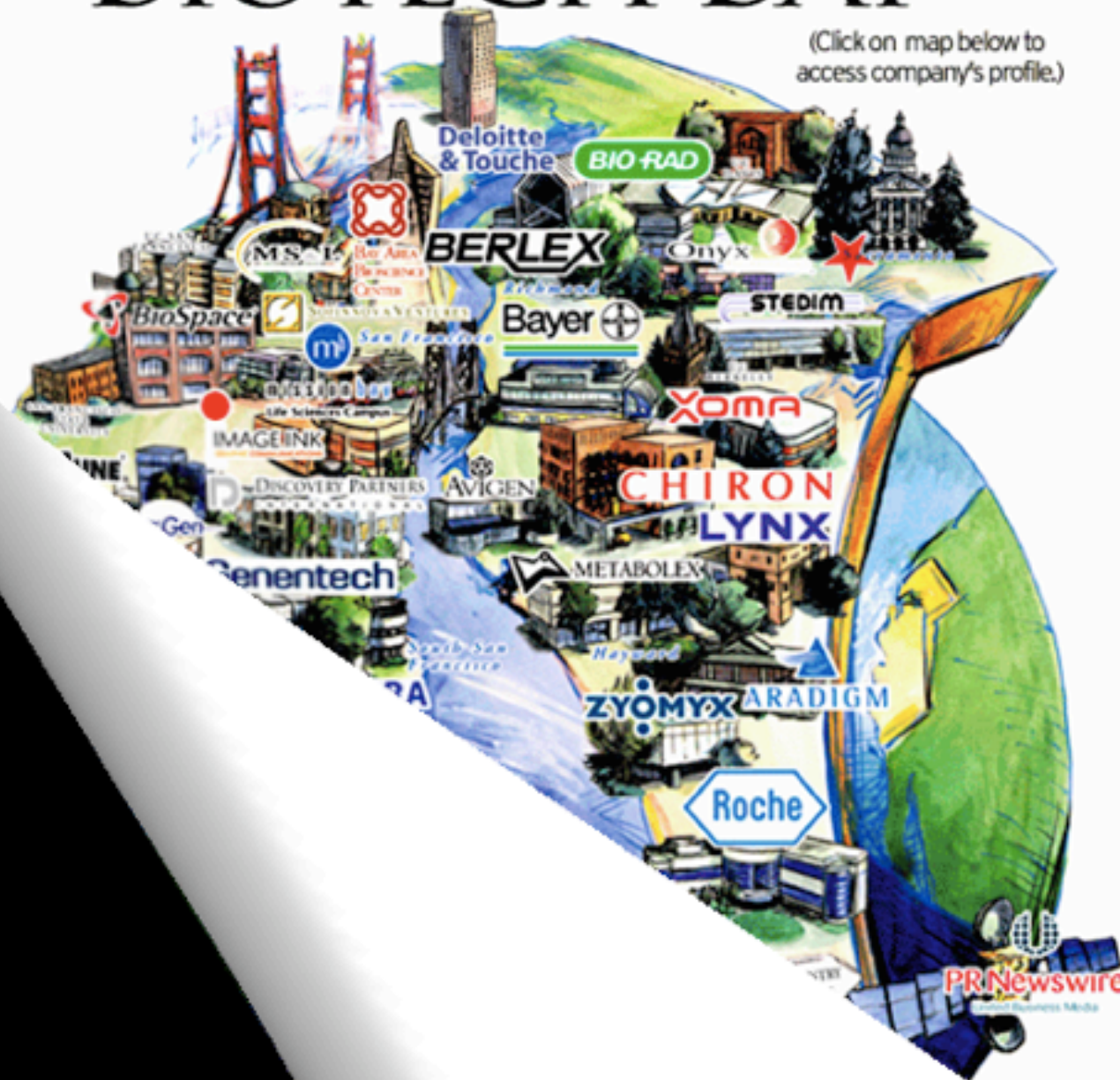


3) But artemisinin resistance is already occurring.

Must we always spend many years and \$25M for each pressing biotech project?

BIOTECH BAY™

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access company's profile.)



Foundational knowledge
(understand how biology works)

Engineering tools
(make biology easy to engineer)

Business innovation
(dorm room biotechs?)

Education and educational leaders
(innovative workforce, intellectual attractors)

Ethics and human practice
(ensure human and environmental flourishing)

Constructive policies
(safety; security; property rights)



Douglas Adesko for The New York Times

NY Times profiles hardscrabble SF iGEM team

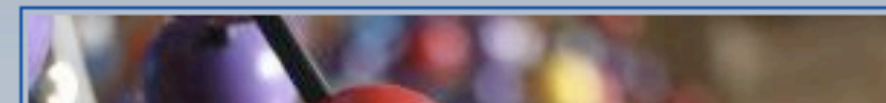
An account of the City College of San Francisco's trials and tribulations during the 2009 International Genetically Engineered Machines (iGEM) competition, which reveals a team of budding synthetic biologists that embody the audacity and grit that iGEM is supposed to be about.

CONTINUE

Welcome to SynBERC

The Synthetic Biology Engineering Research Center (SynBERC) is a multi-institution

News and notes







Cambridge iGEM 2009



Engineering tools

Standard Biological Parts

Gene Synthesis

Engineered Genetic Abstractions



biofab launches as world's first biological design-build facility

18 jan 2010

posted by kcosta

Berkeley – With seed money from the National Science Foundation (NSF), bioengineers from the University of California, Berkeley, and Stanford University are ramping up efforts to characterize the thousands of control elements critical to the engineering of microbes, so that eventually researchers can mix and match these "DNA parts" in synthetic organisms to produce new drugs, fuels or chemicals.

Today, a single designer microbe can take years to create and cost tens of millions of dollars, since each control element – a promoter or transcription factor has to be identified, characterized, and tweaked in order to be reused. One UC Berkeley project to engineer microbes to produce the anti-malarial drug artemisinin took 10 years to get out of the lab into small-scale production, at a cost of \$25 million.

The new BIOFAB: International Open Facility Advancing Biotechnology (BIOFAB), with two years of funding from

navigation

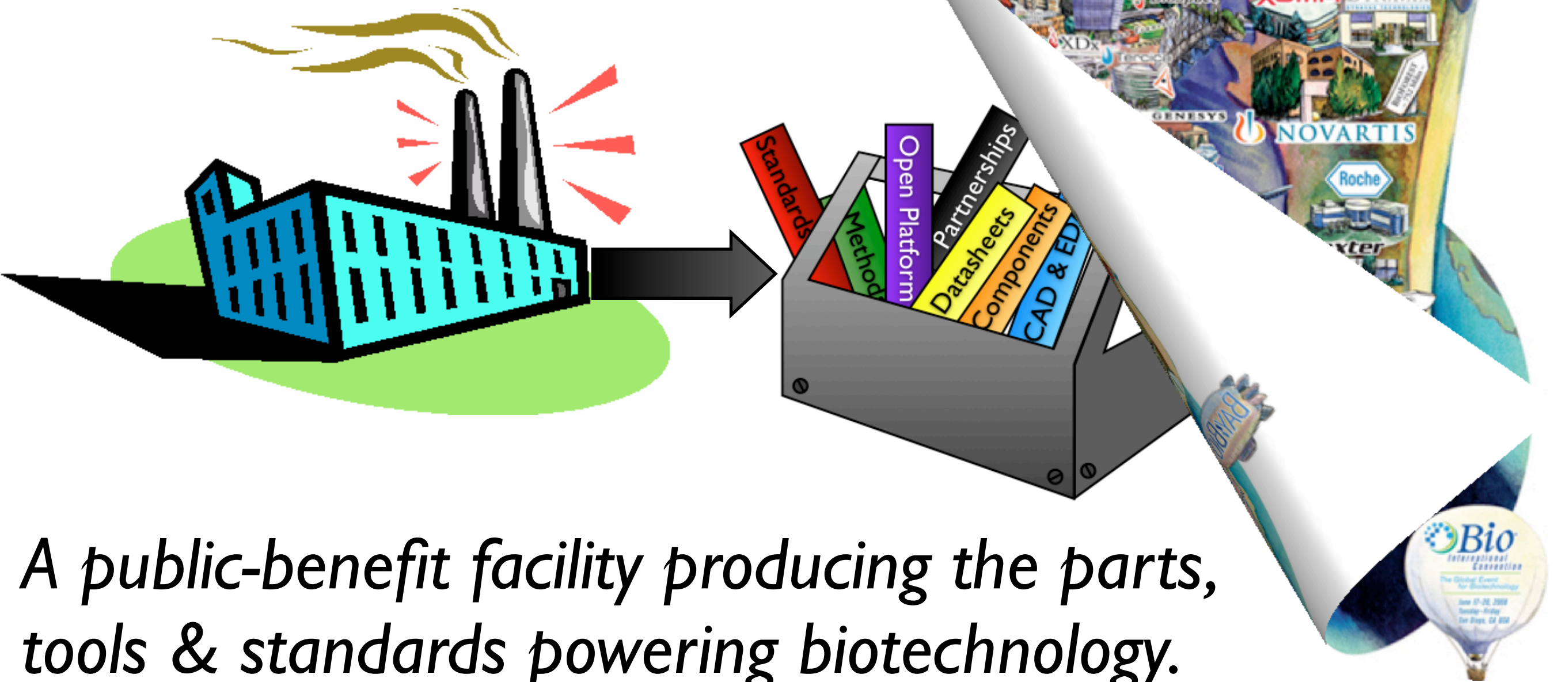
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What is the BioFAB?



A public-benefit facility producing the parts, tools & standards powering biotechnology.

“Off-the-shelf genetic parts cut our project development times and overall costs by half.”

- Jack Newman, Founder & SVP Research, Amyris Biotechnologies

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The BioBricks Foundation (BBF) is a not-for-profit organization founded by engineers and scientists from MIT, Harvard, and UCSF with significant experience in both non-profit and commercial biotechnology research. BBF encourages the development and responsible use of technologies based on BioBrick™ standard DNA parts that encode basic biological functions.

Using BioBrick™ standard biological parts, a synthetic biologist or biological engineer can already, to some extent, program living organisms in the same way a computer scientist can program a computer. The DNA sequence information and other characteristics of BioBrick™ standard biological parts are made available to the public free of charge currently via MIT's [Registry of Standard Biological Parts](#).

Any individual or organization is welcome to design, improve, and contribute BioBrick™ standard biological parts to the Registry. For example, in the summer of 2007, over 600 students and instructors at 60+ universities around the world are making, sharing, and using BioBrick™ standard biological parts as part of the [International Genetically Engineered Machine \(iGEM\)](#) competition.

News

- The [BioBrick Public Agreement](#) Version 1a is now available for public distribution and comment. Your final feedback is requested.
- The BBF helps start the [BIOFAB](#) International Open Facility Advancing Biotechnology (BIOFAB).
- [Ginkgo BioWorks](#) and [New England Biolabs](#) have developed and are selling their first [BioBrick Assembly Kit](#)!
- The [BBF RFC process](#) has been implemented. Request an RFC number from rfc AT biobricks.org.

www.biobricks.org

An Open Tech. Platform for Bio.

Early 1970s



“The first Unix application would be a word-processing program to be used by AT&T's patent-writing group.”

<http://www.spectrum.ieee.org/print/1571>

Mid 70s to Mid 90s



“Who can afford to do professional work for nothing? ... Nothing would please me more than being able to hire ten programmers and deluge the hobby market with good software.”

Bill Gates, Microsoft, Inc.

<http://www.time.com>



“Proprietary software divides the users and keeps them helpless, and that is wrong.”

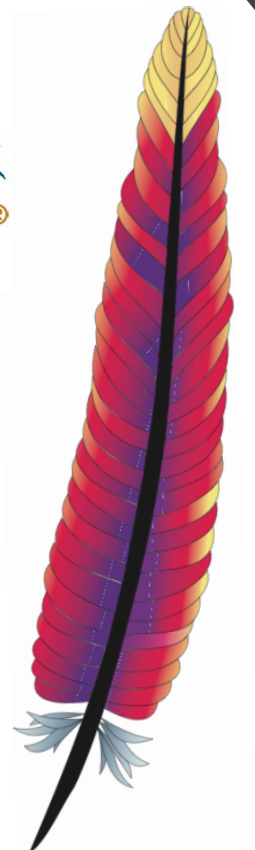
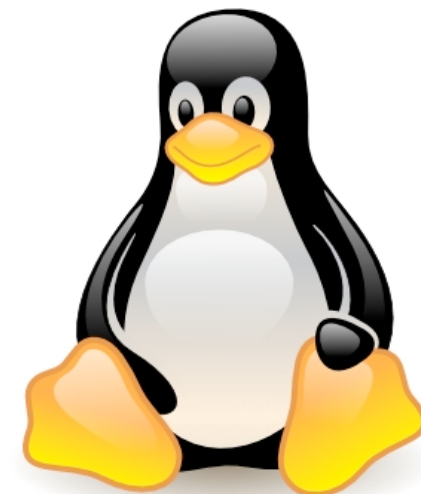
Richard Stallman, Free Software Foundation

<http://www.boycottnovell.com/2009/03/14/>

Today



MySQL®



Free, Open Tools

What do we need do?

Continue to Close Federal Support
(foundational investments just starting)

Lead on Policy
(property rights & security)

Enable and Inspire New Communities
(we shouldn't now know
the top biotech companies of 2020)

Work Together
(much of the work will be outside existing structures)



The living bridges of Cherrapunji, India are made from the roots of the *Ficus elastica* tree. (<http://rootbridges.blogspot.com/>)